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PUBLICATION OF RIVER GAGE READINGS.

River stations are maintained by the Weather Bureau in the interest of navigation. At the present time the numerous

stations report by telegraph to 24 district centers, where forecasts and warnings are issued under the supervision of the Central Office at Washington, D. C. The publication of the 8 a. m. readings of the river gages is of great importance to local hydraulic engineers, and the seventh volume of such publication, by Prof. H. C. Frankenfield, has just been issued by the Weather Bureau. The whole series of volumes covers the following periods, respectively: Part I, 1858-1889; Part II, 1860-1889; Part III, 1875-1889; Part IV, 1890-1892; Part V, 1893-1895; Part VI, 1896-1899; Part VII, 1900-1904.

The river stages given are vertical heights, in feet and tenths of a foot, of the river surface above or below an arbitrarily assumed plane, which is approximately that of lowest water occurring at any place with a natural free flow of water. Abnormally low water due to an ice gorge above a station is not considered in establishing low water.

Observations of river stages are made as near 8 a. m., seventy-fifth meridian time, as the exigencies of the service will permit.

The tabulated gage readings are preceded by a statement which includes the locations of stations, description of gages and bench marks, heights of danger lines, low water and flood marks, and other data for the various river stations whose gage readings are included in the tables. The gage readings are arranged by river systems, and are preceded by two indexes—one alphabetical with respect to the various river systems, and the second following the arrangement of the text. The former is useful in studying the regimen of any given river, while the latter enables ready reference to be made to any desired station.

Following the descriptive text are given tables of elevations of zeros of river gages above mean sea level, danger-line stages, and the lengths of the rivers and their drainage areas.—C. A.

WEATHER BUREAU MEN AS EDUCATORS.

Mr. S. S. Bassler, Local Forecaster, Cincinnati, Ohio, under date of February 23, reports that on February 21 he read a paper on the work of the Weather Bureau before a farmers' institute at Amelia, Ohio.

Mr. Patrick Connor, Local Forecaster, Kansas City, Mo., reports a short address on the weather before the meeting of the school principals of that city December 16, 1905.

Mr. M. L. Fuller, Assistant Observer, reports the following lectures given during February and March: February 9, before the Chickasaw County Farmers' Institute, Nashua, Iowa, an illustrated address on weather forecasts, and how the farmer may profit by them. February 10 and 14, at Weather Bureau office, Charles City, to teachers from local high school and Charles City College, and to the local press; also February 19, at Mason City, Iowa, High School; also March 12, at Storm Lake, Iowa, High School, a lecture, illustrated by stereopticon, on weather forecasts and the work of the Weather Bureau. February 14-17, a series of four 40-minute addresses before the students of Charles City College. February 19, office equipment explained to 30 students of the college. March 8, before the Dows, Iowa, High School; also March 12, at Buena Vista College, an address on forecasts and the Weather Bureau.

Mr. G. A. Loveland, Section Director, Lincoln, Nebr., under date of February 19, 1906, reports the following public addresses recently made by him: Before the teachers of the science section of the Nebraska State Teachers' Association on December 28, 1905, on the subject of clouds, illustrated by stereopticon. Before the Young Men's Christian Association of Exeter, February 9, on how the weather is made.

Prof. A. G. McAdie, of the San Francisco, Cal., office, reports a lecture, illustrated with stereopticon, on atmospheric vapor and mountain observatories at the Congregational Church, Reno, Nev., under the auspices of the State University, on the evening of February 21.

Mr. G. Harold Noyes, Observer, La Salle, Ill., reports the following educational work: An informal address in the Weather Bureau office, with explanation of instruments, to the members of the La Salle County Editorial Association. April 28, 1905, a prepared address was delivered before the class in general science of the La Salle-Peru Township High School; the class subsequently visited the office in small sections. During the Christmas vacation a class from the Lincoln School visited the Weather Bureau office, and listened to an explanation of the work of the Bureau, and studied the instruments; a day or two later some students of Northwestern University made a similar informal visit.

Mr. G. R. Oberholzer, Observer, La Crosse, Wis., under date of February 16, reports that classes in physical geography and physics from the senior class of the high school had recently visited the Weather Bureau office; the instruments used by the Bureau were exhibited and explained, and a talk was given covering the making and use of weather maps. He was also called upon to address the La Crosse Agricultural, Horticultural and Dairy Association on February 14, when the movement of storms and cold waves was illustrated by means of maps distributed among the audience.

Mr. H. W. Richardson, Local Forecaster, Duluth, Minn., under date of February 27, reports that the physiography section of the Duluth State Normal School, 40 pupils, visited the Weather Bureau office, and that the instrumental equipment was explained and a brief lecture delivered, dealing with meteorology, forecasting, and the general work of the Bureau.

Mr. G. N. Salisbury, Section Director, Seattle, Wash., under date of February 20, reports the following educational work during January, 1906: On the 23d he completed his course of instruction for the semester (22 lessons) to the class in practical meteorology at the State University. On the evening of the 23d, before the Young Men's Real Estate Club, a short sketch was given of the inception and work of the old Signal Service, and the organization, methods, and scope of the work of the present Weather Bureau. On January 24 a section of the Ballard High School class in physical geography visited the office, and were shown the instruments. On the 26th a second section of the above class made a similar visit, and on the 30th a class in physical geography from the Brighton High School. On the evening of February 19 Mr. Salisbury lectured before the Men's Club of the First Methodist Church of Seattle on wind, rain, and weather changes due to cyclones and anticyclones.

Mr. James H. Spencer, Observer, Dubuque, Iowa, reports that on the evening of March 14 he spoke on the weather before about fifty members of St. Luke's Fraternity of that city; the talk was illustrated by use of weather maps and black-board diagrams.

Mr. W. P. Stewart, Escanaba, Mich., under date of February 7 reports that the class in physics from the Escanaba High School visited the Weather Bureau office in two sections on February 2 and 6; each section was given a 45-minute lecture

on the construction and use of thermometers, and the distribution of atmospheric temperatures.

LIFE AND WORK OF JAMES P. ESPY.

In reply to a recent letter the Editor has said:

The general relation of modern meteorology to Professor Espy's work is well known, but the special relations between himself and the National Government are only imperfectly understood. He was appointed Government meteorologist about 1842, and assigned to duty first in the War Department, then in the Navy Department, and eventually under the Smithsonian. The last few years of his life seem to have been spent, without Government salary, in putting his fourth report through the press. The details of his official relations to the Government can, I think, only be discovered by careful search through the records of the various departments, with the hearty assistance of the respective officials. I hope that some one will work up this chapter in Espy's life. A preceding period, namely his life in Philadelphia, is equally interesting, but can be worked up only by some one having access to the records in that city.

The Editor has long been collecting whatever scraps of information he can find relative to the life and work of James Pollard Espy. A few items are given in the MONTHLY WEATHER REVIEW (see vol. 24, 1896, p. 334; vol. 25, 1897, p. 163; and vol. 28, 1900, p. 209); also Weather Bureau Bulletin 11, pp. 305-316. There is also a sketch of his life, with a portrait, in Popular Science Monthly for April, 1889, pp. 834-840. See also "Remarks on the character, life, and work of Espy," by Professor Bache, in the Smithsonian Report for 1859, pages 108-111.

The following article is copied from "Notes and queries, historical and genealogical, chiefly relating to interior Pennsylvania," edited by William Henry Egle, reprint, third series, volume 3, Harrisburg, Pa., 1896, page 73. The items have undoubtedly been gathered by Doctor Egle from "A few incidents in the life of Prof. James P. Espy," by his niece, Mrs. L. M. Morehead, Cincinnati, Ohio, 1888, and are not easily accessible to the readers of this REVIEW.

In the "Reminiscences of B. Perley Poore," lately issued from the press, there appears a strange misstatement in a short sketch of the life of the distinguished meteorologist, Prof. James P. Espy, to the effect that his education had been so neglected that at the age of seventeen he could not read. In justice to his parents, people of education, and to his relatives, now long passed away, who at different times in the long ago filled important positions in the centers of learning, I would correct this error.

Mr. Espy was born in Pennsylvania, but when a mere infant his father removed to Kentucky. After a few years, having purchased a tract of land in the beautiful Miami Valley, he removed to Ohio. While a resident of Kentucky his eldest daughter married Mr. Joseph Simpson, of Mount Sterling, brother to the late Judge Simpson of the Court of Appeals of that State, and with this sister James Espy remained, for better advantages of education that could be secured at that time in Ohio, and was "at eighteen" a student at Transylvania University in Lexington.

James Espy did not graduate, at least we have no record to that effect, but, after a few years of close application, joined his family in Ohio and commenced the study of law while teaching school in Xenia. He was then near 23 years of age. His love for teaching amounted to enthusiasm, and although he completed his law studies he finally abandoned the idea of choosing the law as his profession, and determined to follow the bent of his inclination and become a conscientious instructor of youth.

When Mr. Espy was about 25 years of age he decided to return to his native State, where he felt he could avail himself of more abundant facilities for the acquirement of scientific knowledge, from early youth a strong craving of his nature. He went at once to Bedford, and through the influence of his relatives there was appointed principal of the academy at Cumberland, Md., which position he filled with credit to himself, and satisfaction to the intelligent board of trustees.

During the first few years succeeding the establishment of the Smithsonian Institute, Professor Henry and Professor Espy were intimately associated as co-regents¹ in its management, and between them there always existed a warm friendship. It is not many years since the writer of this sketch sat by Professor Henry at a charming dinner on K street,

¹ Neither Henry nor Espy was a regent.—C. A.